ABSTRACT

The present invention is an apparatus for Fourier transform spectrometry using a fixed or non-scanning interferometer wherein a pair of separated phase related electromagnetic or radiant sources produce an interference pattern that is detected and converted into its respective spectral content by a stationary converter. One application for this apparatus includes analyzing signal from a Bragg fiber-grating sensor. When coupled to a Bragg fiber-grating sensor this apparatus forms the basis of a wavelength demodulator. This demodulator converts optical frequencies down to electrical frequencies that can be readily measured with an electronic converter. This fixed interferometer has no moving parts, which greatly reduces its complexity and cost compared to a scanning interferometer.